

CLAIMS

1. A semiconductor light emitting device comprising:

a substrate;

5 a first light emitting member that is formed on the substrate in an epitaxial growth step of a wafer fabrication process;

an electrically conductive pattern that is formed on the substrate in a wiring step of the wafer fabrication process; and

10 a second light emitting member that is separately formed and then mounted on the electrically conductive pattern, the second light emitting member emitting light of a different color from the first light emitting member.

2. The semiconductor light emitting device of Claim 1, wherein

15 the electrically conductive pattern includes a plurality of pads,

the first light emitting member includes a plurality of first light emitting elements, and

20 the second light emitting member includes a plurality of second light emitting elements that are mounted on the plurality of pads in a one-to-one correspondence.

3. The semiconductor light emitting device of Claim 2, wherein

25 the plurality of first light emitting elements and the plurality of second light emitting elements are arranged in a matrix on the substrate, in such a manner that every light emitting element

adjacent to a second light emitting element in row and column directions is a first light emitting element.

4. The semiconductor light emitting device of Claim 3, wherein
5 each of the plurality of first light emitting elements is one of a red LED and a blue LED, and each of the plurality of second light emitting elements is a different one of the red LED and the blue LED, and

the semiconductor light emitting device further comprises:
10 a phosphor that covers a plurality of red LEDs and a plurality of blue LEDs, the phosphor converting blue light emitted by the plurality of blue LEDs into green-yellow light.

5. The semiconductor light emitting device of Claim 4, wherein
15 the red light has a peak emission wavelength within a range of 615 nm and 635 nm,

the blue light has a peak emission wavelength within a range of 450 nm and 470 nm, and

the green-yellow light has a peak emission wavelength within
20 a range of 540 nm and 560 nm.

6. The semiconductor light emitting device of Claim 5, wherein
the red light has a peak emission wavelength within a range of 620 nm and 630 nm,

25 the blue light has a peak emission wavelength within a range of 455 nm and 465 nm, and

the green-yellow light has a peak emission wavelength within a range of 545 nm and 555 nm.

7. The semiconductor light emitting device of Claim 4, wherein
5 the phosphor is a silicate phosphor $(\text{Ba, Sr})_2\text{SiO}_4:\text{Eu}^{2+}$.

8. The semiconductor light emitting device of Claim 4, wherein
the substrate is made of one of SiC and AlN materials.

10 9. The semiconductor light emitting device of Claim 2, further comprising:

a wiring pattern that is formed on the substrate in the wiring step of the wafer fabrication process, the wiring pattern electrically connecting the plurality of first light emitting
15 elements and the plurality of second light emitting elements together.

10. The semiconductor light emitting device of Claim 9, wherein
the wiring pattern connects the plurality of first light
20 emitting elements and the plurality of second light emitting elements in series.

11. The semiconductor light emitting device of Claim 1, wherein
the first light emitting member emits blue light, and the
25 second light emitting member emits red light, and
the semiconductor light emitting device further comprises:

a phosphor that covers the first light emitting member and the second light emitting member, the phosphor converting the blue light into green-yellow light.

5 12. The semiconductor light emitting device of Claim 11, wherein the phosphor is a silicate phosphor $(\text{Ba}, \text{Sr})_2\text{SiO}_4:\text{Eu}^{2+}$.

13. The semiconductor light emitting device of Claim 11, wherein the red light has a peak emission wavelength within a range
10 of 615 nm and 635 nm,

the blue light has a peak emission wavelength within a range of 450 nm and 470 nm, and

the green-yellow light has a peak emission wavelength within a range of 540 nm and 560 nm.

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14. The semiconductor light emitting device of Claim 13, wherein the red light has a peak emission wavelength within a range of 620 nm and 630 nm,

the blue light has a peak emission wavelength within a range
20 of 455 nm and 465 nm, and

the green-yellow light has a peak emission wavelength within a range of 545 nm and 555 nm.

15. The semiconductor light emitting device of Claim 1, further
25 comprising

a third light emitting member that is mounted on the substrate,

the third light emitting member emitting light of a different color from the first light emitting member and the second light emitting member.

- 5 16. A light emitting module comprising:
- a printed-wiring board; and
- a semiconductor light emitting device that is claimed in one of Claims 1 to 15 and is mounted on the printed-wiring board.
- 10 17. A lighting apparatus comprising a light emitting module claimed in Claim 16.